

ABSTRACT OF THE INVENTION

A variable illuminator, for instance a device for scanning a beam of light, emits a selected amount of power to a plurality of spots across a field of view. The amount of power is determined as inversely proportional to the apparent brightness of each spot. In the case where the spot size is equal to pixel size, the device may operate with a non-imaging detector. In the case where pixel size substantially equals spot size, the output of the variable illuminator may be converged to produce a substantially uniform detector response and the image information is determined as the inverse of a frame buffer used to drive the variable illuminator. The illuminator and detector may be driven synchronously. In the case where an imaging detector is used, the variable illumination may be used to compress the dynamic range of the field of view to substantially within the dynamic range of the imaging detector.